CLAIMS

1. A composition of endothelial cells comprising immortal microvascular endothelial cells, said cells each comprising a recombinant expression cassette encoding telomerase, wherein said cells (a) have a normal karyotype, (b) are resistant to apoptosis relative to primary microvascular endothelial cells, and (c) are not transformed.

2. The composition of claim 1, wherein said cells are human dermal microvascular endothelial cells.

3. The composition of claim 1, wherein said telomerase is a human telomerase reverse transcriptase catalytic subunit.

4. The composition of claim 1, wherein said cells express one or more phenotypic traits expressed uniquely by young primary microvascular endothelial cells.

5. The composition of claim 4, wherein said phenotypic trait is selected from the group consisting of surface receptors, signaling pathways, and both.

6. The composition of claim 1, wherein said cells stably express a transformed genetic marker.

7. The composition of claim 6, wherein said transformed genetic marker is enhanced green fluorescent protein (eGFP).

8. The composition of claim 7, wherein said cells form human microvascular structures *in vitro*.

9. The composition of claim 8, wherein said human microvascular structures are quantifiable with digital imaging.

10. The composition of claim 9, wherein said digital imaging is fluorescence digital imaging.

11. The composition of claim 8, wherein growth of said human microvascular structures is modulated by a pharmaceutically acceptable compound.

12. The composition of claim 11, wherein said compound promotes angiogenesis.

13. The composition of claim 12, wherein said compound is VEGF.

14. The composition of claim 12, wherein said compound is FGF-2.

15. The composition of claim 11, wherein said compound is an anti-angiogenic compound.

16. The composition of claim 15, wherein said anti-angiogenic compound is endostatin.

17. The composition of claim 7, wherein said cells form human microvascular structures *in vivo*.

18. The composition of claim 17, wherein said human microvascular structures are quantifiable with digital imaging.

19. The composition of claim 18, wherein said digital imaging is fluorescence digital imaging.

20. The composition of claim 17, wherein growth of said human microvascular structures is modulated by a pharmaceutically acceptable compound.

21. The composition of claim 20, wherein said compound promotes angiogenesis.

22. The composition of claim 21, wherein said compound is VEGF.

23. The composition of claim 21, wherein said compound is FGF-2.

24. The composition of claim 20, wherein said compound is an anti-angiogenic compound.

25. The composition of claim 24, wherein said anti-angiogenic compound is endostatin.

26. The composition of claim 1, wherein said cells form human microvascular structures *in vitro*.

27. The composition of claim 1, wherein said cells form human microvascular structures *in vivo*.

28. The composition of any one of claims 1 to 27, wherein said cells demonstrate an extension of cellular life span and resistance to apoptosis comparable to young primary human dermal microvascular endothelial cells.

29. The composition of claim 28, wherein said cells demonstrate said extended cellular life span and resistance to apoptosis *in vivo* using a SCID-Human Chimeric Microvascular Remodeling Assay System.

30. A composition of endothelial cells comprising immortal microvascular endothelial cells, wherein said cells each stably express enhanced green fluorescent protein (eGFP) and comprise a recombinant expression cassette encoding telomerase, wherein said cells (a) have a normal karyotype, (b) are resistant to apoptosis relative to primary microvascular endothelial cells, and (c) are not transformed.

31. A method of producing a composition of endothelial cells comprising immortal microvascular endothelial cells, wherein said cells each comprise a recombinant expression cassette encoding telomerase, wherein said cells (a) have a normal karyotype, (b) are resistant to apoptosis relative to primary microvascular endothelial cells, and (c) are not transformed, comprising introducing said recombinant expression cassette encoding telomerase into human dermal microvascular endothelial cells and expressing said telomerase.

32. A composition produced by the method of claim 31, wherein said microvascular cells form neovasculature, and wherein host blood is transmitted through said neovasculature.

33. A composition produced by the method of claim 31, wherein said microvascular cells form neovasculature *in vivo*, and wherein host blood is transmitted through said neovasculature.

34. A composition comprising microvascular cells, wherein said cells form neovasculature, and wherein host blood is transmitted through said neovasculature.

35. The composition of claim 34, wherein said cells form neovasculature *in vivo*.

36. The composition of claim 34, wherein said cells comprise a genetic marker, wherein said marker is expressible in said cells; and wherein said marker is introduced into said cells through a molecule of recombinant DNA.

37. The composition of any one of claims 32 to 36, wherein said neovasculature is human and wherein said *in vivo* host is non-human.

38 The composition of claim 37, wherein said *in vivo* host is a non-human mammal.

39. The composition of claim 38, wherein said non-human mammal is a SCID mouse.

40. The composition of any one of claims 32 to 39, wherein said neovasculature is human and wherein said *in vivo* host is non-human, and wherein said cells analyzed with fluorescence digital imaging demonstrate said neovasculature is human and has characteristics that distinguish said neovasculature from non-human host.

41. A method that demonstrates neovasculature formed *in vivo* has characteristics that distinguish said neovasculature from *in vivo* host, comprising producing a composition of endothelial cells according to claim 32; expressing in said cells a transformed genetic marker detectable by a digital imaging system; and analyzing said cells with a digital imaging system so as to detect said genetic marker.

42. The method of claim 41, wherein said digital imaging system is a fluorescence digital imaging system and said genetic marker is enhanced green fluorescent protein (eGFP).

43. An isolated graft comprising the cells of claim 1, wherein said cells form microvascular structures in response to a pharmaceutically acceptable compound that modulates angiogenesis.

44. A method for treating atherosclerosis by implanting the graft of claim 43.

45. A method for treating tumors by implanting the graft of claim 43.

46. A method to enhance wound healing by implanting the graft of claim 43.